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Anesthetic disparity in the delivery of black women: A systematic review

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ABSTRACT

OBJECTIVE

Race disparity touches several spheres of society, such as medicine, making studies on labor pain necessary. The purpose of this review was to understand the disparities in the indication of anesthesia in the delivery of black women compared to white women.

METHODS

A systematic review was conducted in PubMed and VHL databases from March 1, 2022 to March 1, 2023 with the terms "anesthesia" AND "delivery" AND "racial" AND "disparities." No publication date filters were used, however articles in Portuguese, English, and Spanish were selected. Two reviewers screened the articles, and when there was disagreement, a third reviewer did the analysis using the exclusion and inclusion criteria.

RESULTS

Fifty-nine articles were identified, and after eliminating duplicates, 38 had their titles and/or abstracts analyzed. Of these, 22 were excluded by the inclusion criteria and 16 were selected for full examination, 5 of which were eliminated by the exclusion criteria. Finally, 11 articles were selected for qualitative analysis. The main themes addressed were: biased behaviors; belief that black women feel less pain; low racial diversity of health care professionals; distrust in the health care system and in accepting anesthesia; socioeconomic and cultural divergences; and lack of information and understanding of the benefits and risks of anesthesia.

CONCLUSION

It was observed that there is a discrepancy about the use of anesthesia in black women during labor. This fact shows the importance of studying the factors involving these women and their history in society, reducing the damage caused to them.

DESCRIPTORS

Epidural Anesthesia, Race and Health, Pain in Childbirth, Racism, Obstetric Anesthesia.

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INTRODUCTION

Racial and ethnic differences are present in various spheres of health services, culminating in inequalities in the treatment of minorities. This context particularly pervades black women, impacting the care for this population. It might be presumed that the disparities are due to less access to health insurance; however, studies have shown that the discrepancy persists even when health insurance coverage is present[1-3]. It still prevails even when other vulnerabilities such as education, socioeconomic level, and patient's spoken language are eliminated[1]. This illustrates a complex relationship between social stigmas, health systems, service providers, and healthcare professionals.

Regarding obstetric services, various epidemiological studies have shown that black women were given less analgesia during childbirth compared to white women, resulting in worse pain management[1-7]. In numerous cases, these women are subjected to more general anesthesia than epidural blocks during cesarean sections, even though epidural anesthesia is the procedure of choice[5]. Moreover, they also constituted the population that received the least intrapartum analgesia in vaginal births[2]. These findings support the assertion that the care of these women during childbirth is unsatisfactory/inadequate, exacerbating morbidity and mortality rates. As a result, the postpartum death rate in this group is three to four times higher than white women, regardless of the socioeconomic context[1].

Thus, it is essential to understand the context of these disparities in more depth. Therefore, this systematic review was conducted to comprehend the disparities involving the use of anesthesia during the delivery of black women compared to white women.

METHODS

For the development of this research, articles evaluating the disparity in the use of anesthesia during the delivery of black women were included, compared to other races. Articles were excluded when analyzing racial disparities in pregnancy that did not pertain to intrapartum analgesia, racial inequalities in non-pregnant women, anesthesia outside the delivery timeframe, and racial studies where black women were not the focus.

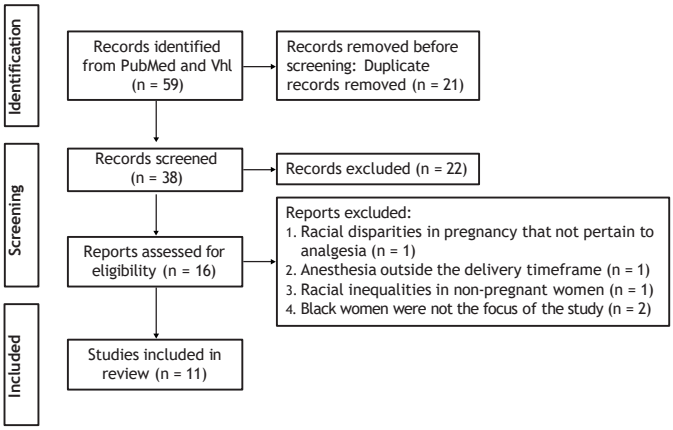
A systematic review was performed using the PubMed and Vhl databases, conducting searches from March 1, 2022, to March 1, 2023. The descriptors "anesthesia" AND "delivery" AND "racial" AND "disparities" were used to search for keywords in both the title and the abstract. No filters for the publication date were used. Moreover, filters for articles written in Portuguese, English, and Spanish were utilized.

For the selection process, two reviewers (J.P.O and J.B.M) independently screened articles in PubMed and Vhl. In instances of disagreement, a third reviewer (L.S.S.) performed the analysis for selection using the exclusion and inclusion criteria.

RESULTS

In total, 59 articles were identified in the PubMed and Vhl databases. After eliminating duplicate studies, 38 were selected for analysis of their titles and/or abstracts. Of these, 22 were excluded because they were related to racial disparities in pregnancy that not pertain to analgesia; anesthesia not related to childbirth; racial inequalities in other pregnancy comorbidities and in non-pregnant women; and analysis of divergences where the studied race was not black women. Thus, 16 articles were selected for complete analysis, with 5 excluded for not meeting the inclusion criteria, that is, racial disparities of black women for anesthetic indication in childbirth. As a result, 11 articles were selected for the qualitative analysis of this review (Figure 1 and Table 1).

Figure 1. Identification of studies via databases PubMed and Vhl. Source: the authors.



Regarding the publication timeline, of the 11 selected articles, 6 were written in the last three years - 6(54). The oldest publication is from 2014, demonstrating that before this the topic was unexplored on the platforms in question. Regarding the type of studies, 9 were retrospective observational research – 7(63).

In terms of the types of published journals, four articles were featured in anesthesia-related journals - 4(36), three in journals of gynecology and obstetrics themes - 4(36), and in other medical-themed journals – like pathology and general medical matters 3(27).

The main themes evaluated were biased behaviors of healthcare professionals; low racial diversity among health professionals; mistrust in the health system and in accepting anesthesia; healthcare professionals' belief that black women feel less pain; socioeconomic and cultural divergences; and lack of information and understanding of the benefits and risks of anesthesia.

Table 1. Articles on anesthetic disparity in black women's childbirth.

Authors	Year	Type of study	Themes
Morris T, Schulman M	2014	Retrospective Observational	Biased behaviors of healthcare professionals; Mistrust in the health system and in accepting anesthesia; Healthcare professionals' belief that black women feel less pain; Lack of information and understanding of the benefits and risks of anesthesia
Husarova V, Macdarby L, Dicker P, Malone FD, McCaul CL	2016	Retrospective Observational	Biased behaviors of healthcare professionals; Low racial diversity among health professionals; Healthcare professionals' belief that black women feel less pain.
Caughey AB	2016	Editorial	Biased behaviors of healthcare professionals; Mistrust in the health system and in accepting anesthesia; Socioeconomic and cultural divergences.
Butwick AJ, Blumenfeld YJ, Brookfield KF, Nelson LM, Weiniger CF.	2016	Retrospective Observational	Biased behaviors of healthcare professionals; Mistrust in the health system and in accepting anesthesia; Socioeconomic and cultural divergences; Lack of information and understanding of the benefits and risks of anesthesia.
Lange EMS, Rao S, Toledo P.	2017	Review article	Biased behaviors of healthcare professionals; Lack of information and understanding of the benefits and risks of anesthesia.
Lee A, Leffert L	2020	Editorial	Biased behaviors of healthcare professionals; Low racial diversity among health professionals.

Tangel VE, Matthews KC, Abramovitz SE, White RS	2020	Retrospective Observational	Biased behaviors of healthcare professionals; Socioeconomic and cultural divergences.
Hsieh YC, Shah HR, Balasubramaniam P	2020	Retrospective Observational	Biased behaviors of healthcare professionals; Socioeconomic and cultural divergences; Lack of information and understanding of the benefits and risks of anesthesia.
Burton BN, Canales C, Du AL, Martin EI, Cannesson M, Gabriel RA.	2021	Retrospective Observational	Biased behaviors of healthcare professionals; Socioeconomic and cultural divergences.
Minehart RD, Bryant AS, Jackson J, Daly JL	2021	Review article	Biased behaviors of healthcare professionals; Mistrust in the health system and in accepting anesthesia; Healthcare professionals' belief that black women feel less pain; Socioeconomic and cultural divergences.
Docheva N, Heimberger S, Mueller A, Bisson C, Arenas G, Perdigan JL, Kordik A, Stewart K, Goodall P, Lengyel E, Rana S	2023	Retrospective Observational	Socioeconomic and cultural divergences.

DISCUSSION

BIASED BEHAVIORS OF HEALTHCARE PROFESSIONALS

Minehart asserts that it is necessary to examine the biased behaviors of health professionals so that structural racism does not perpetuate. To this end, it is necessary to give black women autonomy over their own bodies and to improve the doctor-patient relationship. It is suggested that healthcare professionals reflect on the relationship established with their patients in order to become more balanced and based on shared decision-making. Additionally, it is important for doctors to become more aware of cultural and social differences with the aim to decrease the asymmetry of care for black women[1].

In this context, black women are given more general anesthesia in cesarean births, even when they were candidates to epidural anesthesia[1-7]. In addition, they have lower probability of being given analgesia in general than white women[1-7]. A study involving the population of the state of New York, in the United States of America, found that black women are 44% more likely to be given general anesthesia during a cesarean and 45% more likely to not get any type of analgesia during vaginal childbirth, compared to white women[7]. Another retrospective study containing data from the National Quality Improvement Program of the American College of Surgeons showed that, compared to white women, black women had a 29% lower chance of being given neuraxial anesthesia during childbirth, a 68% higher susceptibility to intra-hospital readmission within 30 days, an 88% higher likelihood of needing a blood transfusion, and a 34% higher chance of having a more prolonged hospitalization[3]. This observation has consequences for these women, as general anesthesia is associated with high rates of postoperative pain, sedation, postpartum hemorrhage, increased risk of death, bronchoaspiration, and intubation failure[3,5].

On the other hand, another group claims that they would have preferred not to have been subjected to epidural anesthesia during childbirth, but 60% of these women felt pressured by healthcare professionals to accept it. These were also the ones who reported the most analgesic failure[1,6,8]. A 19-year-old black female patient reported that at the moment of conception what made her choose epidural anesthesia was the option offered by the nurse: either she should opt for the epidural or she would have to be referred for a cesarean. Thus, due to a lack of knowledge that it was a biased recommendation, she opted for the anesthesia[6].

In relation to the consequences related to the procedure, black women had the highest rates of comorbidities related to anesthesia[1,2,9]. In May 2019, the Centers for Disease Control and Prevention (CDC) published a report comparing the morbidity and mortality of pregnant women and puerperal women, which showed that black women die 3 to 4 times more in antepartum and postpartum compared to white women[1,5,7].

Despite this scenario, less than half of maternal-fetal medicine specialists correctly identified disparities in questionnaires and less than a third stated that ingrained behaviors could affect their patient care[1]. This can be seen in both doctors and nurses, which demonstrates that there is a lack of recognition of disparities at both a personal and collective level in relation to health systems[1].

LOW RACIAL DIVERSITY AMONG HEALTH PROFESSIONALS

Evidence shows that racial diversity among healthcare professionals could mitigate disparities related to anesthesia, as people of the same ethnicity have a greater ability to interpret pain severity than those of different ethnicities[8].

In its 2020 editorial, The Journal of Clinical Anesthesia argued that increasing the diversity of healthcare professionals result in improving patient health access, patient satisfaction, cultural pluralism, and medical sphere sensitivity. Thus, it can highlight the importance of recruiting and training professionals from minority groups in order to reduce racial disparities[2].

PROBLEMS IN WOMEN'S RELATIONSHIPS WITH THE HEALTHCARE SYSTEM

Studies show less trust from black women in the healthcare system and, therefore, less adherence to the recommendation for anesthesia[1,4,5]. Furthermore, due to this distrust of patients with doctors, decisions about childbirth are more delayed. This can reflect in emergency cesareans, in which general anesthesia may be necessary[4,6]. Therefore, as a reflection of this finding, an epidemiological study showed that white women tend to plan more regarding the use of epidural analgesia than black women[6].

Past government experiments have caused the black population to have less trust in the healthcare system, like the Tuskegee Syphilis in the United States, where black people were denied access to known effective treatment for syphilis[1]. As a result, there are lower rates of participation from this population in research, which reduces the knowledge acquired about this group[1]. This is further aggravated by researchers being predominantly white, as this creates a barrier for the participation of the black population[1].

This reality also extends to the sphere of obstetrics. Various research studies and obstetric surgeries were carried out in the past at the expense of abuses and experimentation on black bodies, often without any anesthesia[1]. As a result, the relationship between black women and the health system was structured in a context of distrust and suffering, in which women were used for medical advancement without any form of consent.

Hospitals, as institutions, reflect social interactions and racial and gender dimensions that result in differing outcomes in procedures and the use of analgesia. It is also noted that within organizations, race research is underdeveloped compared to other types of analysis such as gender, which stems from the cultural image and informal interactions between maternity doctors and their patients. Patricia Hill Collins organized a study that identified the cultural image of the black woman as being of a matriarch, welfare mother, and Jezebel[1]. Thus, it associates the image of the black mother as a “bad mother”, while the image of the “good mother” is reserved for white mothers. This idea directly clashes with the doctor-patient relationship[1]. Moreover, when these women do not have an anesthetic plan ready by the time of delivery, they are at the

mercy of organizational decisions and pressures[6].

HEALTH PROFESSIONALS' BELIEF THAT BLACK WOMEN FEEL LESS PAIN

Studies show that health professionals' interpretation of patients' pain influences the decision to administer anesthesia, as there is a belief that some races can withstand more pain than others even if the scores were the same when tested on pain scales[8].

Thus, there are reports that the severity of the painful sensation experienced by black women seems to be underestimated by health professionals[1,6]. In addition, research shows that black women were mistrusted by doctors regarding their anxiety and pain during childbirth[6].

SOCIOECONOMIC AND CULTURAL DIVERGENCE

The inequality in health care between white and black women is closely related and rooted in historical and contemporary factors of inequality that include financial, institutional, and professional aspects, as well as the beliefs of these patients[5].

Patients from minority groups tend to not receive the same access to health care compared to patients from non-minority groups[1,4]. Some of these divergences are attributed to difficulty in accessing health insurance[1,3,5,9,10]. It is implied that inadequate coverage for health services results in worse outcomes at the time of delivery, such as hemorrhage and pain[9,10]. Thus, statistics have shown that black women have had more complications related to anesthesia[1,9,10]. Using the National Inpatient Sample (NIS) database, a retrospective study carried out from 2003 to 2013 showed that black women had a higher incidence of mortality, as well as cardiac arrest and ventricular fibrillation[7,9].

Furthermore, a study conducted in the United States showed that, of the women who had cesarean sections, 67% of black women used government health aid programs, such as Medicare and Medicaid, and 82% of cesarean sections occurred in a university hospital, compared to 43% of Caucasian women, which occurred in hospitals of choice[7.9]. Black women are also more likely to live in poverty, which results in them giving birth in hospitals with higher incidences of morbidity and mortality[1,4,7].

In November 2020, the American Medical Association made a statement recognizing race as a social bias rather than a biological construct, which is defended in Burton's study when he states that race alone would not be sufficient to explain disparities and health outcomes[3]. This also involves the person's relationship with the environment, traditions, and socioeconomic factors[3].

It is known that the clinical monitoring of a pregnant woman by a doula is related to lower rates of cesarean section, lower maternal stress, and other obstetric violence, such as the use of a vacuum extractor and forceps[1]. However, the monitoring by doulas is historically limited for black pregnant women and mothers[1].

One of the factors associated with the choice to use epidural analgesia was a higher level of education, with women with higher levels of education than high school being more likely to opt for this type of anesthesia[5,6,11]. It is found that this number decreases according to the drop in education levels[5,6,11]. In addition, research suggests that less educated individuals are less likely to have their medical questions answered and more likely to be treated impersonally by doctors[6].

Another point that influences the use and choice of the type of analgesic used at the time of childbirth is the obstetrician who will perform the procedure, whether it be an obstetrician, midwife, or family doctor. This happens because of the differences in the practices of each professional, given that the rates of epidural analgesia use are lower in deliveries performed by non-obstetricians and that midwives are less favorable to the use of this analgesia. Thus, as midwives tend to be the professionals of choice for black women, professional recommendations on the subject may be influencing these patients' analgesic decision-making[5,11].

LACK OF INFORMATION AND UNDERSTANDING OF THE BENEFITS AND RISKS OF ANESTHESIA

A study conducted in 2012 at the University of Texas involving 50 women showed that before counseling about childbirth analgesia only 14% of these patients opted for neuraxial analgesia, and after counseling, this number increased to 38%[10]. For this reason, Lange argues that patients' knowledge of epidural analgesia can directly contribute to racial disparities regarding its use[5,10]. Moreover, a study carried out at Northwestern Memorial Hospital concluded that, at the time of deciding on the analgesia used in childbirth, these patients may not be sufficiently informed about the risks and benefits regarding pain management[10]. In 2012, 44% of women reported the internet as the main source of information about anesthesia, which is problematic since the information circulating in this medium is not always reliable, leading to poorly informed patients on the subject[10].

Some reasons for refusing neuraxial anesthesia were fear of paralysis and chronic back pain[9,10], the belief that women should deal with childbirth pain, and advice from friends and family against using this analgesia[10]. Therefore, the disparity regarding the choice of anesthesia used can be more associated with patient preference than access, influenced by knowledge and understanding of the method. Additionally, a study involving 55 women could not find any reports involving difficulty accessing epidural anesthesia but showed a relationship with fear and third-party information/recommendations to avoid this type of anesthesia, associated with pressure from health professionals[6].

LIMITATIONS

In this systematic review, no studies conducted in Brazil were found, so it cannot be said that the same reality is found in the researchers' country of origin concerning the main points analyzed.

CONCLUSION

It can be concluded that, regarding anesthesia in cesarean section childbirth, black women are given more general anesthesia instead of epidural, and in vaginal delivery, they are given less analgesia, resulting in higher rates of complications related to pain management. Moreover, the low ethnic diversity among health professionals affects the recommendation to use anesthetics, as studies indicate that people of the same ethnicity are more sensitive to identifying the pain of their peers. Socioeconomic differences were also proved relevant as they influence the quality of the hospital where the delivery is performed, as well as the possibility of choosing a preferred obstetrician. Lastly, the lack of information about anesthesia was also an important factor in analgesic decision-making.

Additionally, even though the research was focused on understanding the differences in the indication of childbirth anesthesia for black women, various other points were elucidated as the topic was delved into. Beyond pain management, there are also discrepancies regarding access to health, information, and prejudice from health professionals towards black women. Added to this, there is a distrust of these women in the health system, resulting from the disparities and prejudices experienced by these women, and thus, lower adherence to anesthetic recommendations. Therefore, it can be said that inequality generates other sources of inequity, making the patient's skin color affect not only the quality of their care but

the consequences that are generated from it, increasing morbidity and mortality.

In conclusion, this review indicated that there are multifactorial issues leading to racial disparity. This observation shows the importance of studying the factors involving these women and their history in society. Due to the lack of information on the subject in Brazil, there is a knowledge deficit on this matter in the country. Thus, it is necessary to improve national research and identify how the theme transcribes in Brazil, in order to reduce the harm caused to this population.

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